

What is claimed is:

1. An industrial controller for technical processes, in particular production machines, characterized in that the controller has a generally usable, preferably technology-neutral basic system (UMC-K) for the basic functionality of the controller, where instantiable technological object types supplement the basic functionality of the controller by adding technological functionalities, and after instantiation that can be tailored by the user, they are available as technological objects (TO1 - TOn) in the respective applications, with a separation of technological functionality and device functionality.
2. An industrial controller according to Claim 1, characterized in that automatic generation and design of the communications links between technological objects (TO1 - TOn) take place on the basis of the underlying hardware topology and/or the technological solution.
3. An industrial controller according to Claim 1 or 2, characterized in that quality attributes acquired or assigned by the technological objects are taken into account in automatic generation and design of the communications links between technological objects (TO1 - TOn).
4. An industrial controller according to Claim 1, 2 or 3, characterized in that there is flexible relocatability and/or distributability of the technological objects (TO1 - TOn) on hardware systems and/or run time systems (RTS1 - RTS7) of the same or different performance level.
5. An industrial controller according to Claim 4, characterized in that there is flexible relocatability and/or distributability of the technological objects (TO1 - TOn) on hardware systems and/or run time systems (RTS1 - RTS7) of the same or different performance level within a project, with one project relating to data and/or programs from one or more control units.

6. An industrial controller according to one of the preceding claims, characterized in that the functionality of the technological objects (TO1 - TOn) is distributed among control units in equidistant communication with one another in real time with clock synchronization.

7. An industrial controller according to one of the preceding claims, characterized in that a technological scaling is achieved with regard to the functionality of the controller due to the additional loadability of technological object types.

8. An industrial controller according to one of the preceding claims, characterized in that the technological objects (TO1 - TOn) are interleaved to form complex technological objects, so-called container objects.

9. An industrial controller according to one of the preceding claims, characterized in that different views of the technological objects (TO1 - TOn) are available to a user.

10. An industrial controller according to one of the preceding claims, characterized in that feedback-free programming of a technological object (TO1 - TOn) with respect to the other technological objects and the basic system of the controller (UMC-K) is provided, unless feedback is explicitly programmed or designed.

11. An industrial controller according to one of the preceding claims, characterized in that the technological objects (TO1 - TOn) are represented in the engineering system (ES) by graphic elements and/or masks.

12. An industrial controller according to one of the preceding claims, characterized in that the technological object types are clustered into technological packages (TP).

13. A method of programming and designing industrial controllers for technical processes, in particular for production machines, characterized by the use of technological objects (TO1 - TOn) and the sequence of the following steps:

- using a basic system (UMC-K) having a basic functionality, preferably neutral as to technology,
- instantiation of the technological objects (TO1 - TOn),
- interleaving of the technological objects (TO1 - TOn) to form technological objects having a complex functionality,
- distribution and/or placement of the technological objects (TO1 - TOn) on the devices (D1, D2)
- automatic generation of communication channels between the technological objects (TO1 - TOn),
- reusing in particular complex technological objects, already interleaved, in other projects.

14. A method of programming and designing according to Claim 13, characterized in that quality attributes of the technological objects (TO1 - TOn) are taken into account in generating the communication channels.

15. A method of programming and designing according to Claim 13, characterized in that steps b) and e) are optional.

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